

An experimental Mushroom House

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The diversity in the practices of the commercial mushroom growers has led to a demand for experimental work to determine the most satisfactory methods for the production of maximum yields. The Department of Botany at The Pennsylvania State College is undertaking investigations in mushroom culture and has recently constructed an experimental mushroom house.



The handling of the compost, (numbers and methods of turnings required, amounts of water to be added, etc) optimum temperatures of the houses,-ventilation, light, size, number per unit area, and depth of planting, of the spawn piece, depth of the substrate in the bed, possible addition of nutritional substances, (artificial fertilizers) control of diseases, breeding of improved strains and numerous other questions under these heads have made it highly desirable to construct an experimental mushroom plant where appropriate tests can be made.

In working out plans for such a plant no very special construction appeared necessary at this stage other than that convenient beds, ventilation, suitable temperature, and moisture

control be provided. The experimental house just completed is built of hollow, concrete, cinder blocks. Cinder blocks because of their demonstrated low temperature transmission coefficient¹ (Hechler, 1927) and moderate cost appeared to be adequate for the type of house required.

The house is 12×20×10 feet high to the eaves, has gable roof with open ventilator running the full length of the ridge pole. A wooden ceiling insulated with a 6" layer of sawdust is provided with automatic sectional dampers which can be independently controlled. The ceiling ventilator runs through the median line, the full length of the house and is directly under the ridge pole opening. Five double, six-light, sash windows have been installed for convenient lighting during operations and for possible experiments concerning the effect of light, etc.

Three tiers of beds each 3 feet wide, 30" apart from bottom of bottom run the length of the house. The construction of the beds is such that they or parts of them can be removed for purposes of cleaning, disinfecting and to make room for apparatus which may be installed from time to time for certain experiments. Heat is provided by two 2" steam pipes 2 feet from the ground and running completely around and against the walls of the house. A steam valve permits the emission of live steam for the purpose of raising the vapor pressure of the atmosphere. Running water is provided and electric connections for apparatus and illumination have been installed.

This is the first house of its kind constructed for purely experimental purposes.

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¹ Hechler, F. G. Insulation of Fruit Storage Houses. *Agricultural Engineering*. 1927 Volume 8, No. 9, pages 249-251.